

ABSTRACT OF THE DISCLOSURE

A new subband feedback cancellation scheme is proposed, capable of providing additional stable gain without introducing audible artifacts. The subband feedback cancellation scheme employs a cascade of two narrow-band filters $A_i(Z)$ and $B_i(Z)$ along with a fixed delay, instead of a single filter $W_i(Z)$ and a delay to represent the feedback path in each subband. The first filter, $A_i(Z)$, is called the training filter, and models the static portion of the feedback path in i^{th} subband, including microphone, receiver, ear canal resonance, and other relatively static parameters. The training filter can be implemented as a FIR filter or as an IIR filter. The second filter, $B_i(Z)$, is called a tracking filter and is typically implemented as a FIR filter with fewer taps than the training filter. This second filter tracks the variations of the feedback path in the i^{th} subband caused by jaw movement or objects close to the ears of the user.